

**Amendments to the Claims:**

The listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

1. (Currently Amended) A position control method by motor ~~drive~~ drive comprising:

rotating a rotor of said motor drive according to the given target opening, and detecting the opening of a movable vane by an encoder, said motor opening and shutting a passage of an intake air pipe to a turbo charger of ~~the~~ an automobile by the ~~mov-able~~ movable vane, and

controlling the movable vane in the passage of said intake air pipe ~~so that it may~~ to reach the target opening,

wherein

the rotational position of the motor drive is controlled to ~~the~~ a stop position in the direction where said movable vane is closed, and ~~the~~ a stop position in the direction where said movable vane is opened, and

the motor drive is controlled so that the passage of the intake air pipe ~~may~~ become the target opening by setting said stop position as an operation reference position of said motor drive, and setting between said stop positions as driving dynamic range of said motor.

2. (Currently Amended) A position control method by motor drive according to claim 1, wherein the operation of said rotor which obtains the operation reference position of said motor drive is executed at power-on or when ~~the~~ an ignition switch is turned on or turned off.

3. (Currently Amended) A position control method by motor drive according to claim 1, wherein said motor drive is driven in a direction where the pipe to said turbo charger is opened and the direction where said pipe is shut by

the driving force provided beforehand so that sticking at the stop position ~~can be~~ avoided, and

~~When~~ when the time that the signal of the encoder which detects said opening does not change elapses ~~the~~ a predetermined time, the positions of said encoder are set as a reference position for full open operation of the movable vane and a reference position for full close operation of the movable vane.

4. (Currently Amended) A position control method by motor drive according to claim 1, wherein the control of revolution of the motor drive to the stop position in the direction where said movable vane is shut and the stop position in the direction where said movable vane is opened is executed when ~~the~~ an ignition switch is off.

5. (Currently Amended) A position control method by motor drive according to claim 1, wherein ~~the~~ a PID control is executed with the target opening changed into an open direction of the movable vane one by one, and the opening position is set as a stop position in an open direction of said movable when the state that the opening position counted by said encoder does not change continues during ~~the~~ a predetermined time.

6. (Currently Amended) A position control method by motor drive according to claim 1, wherein ~~the~~ a PID control is executed with the target opening changed into an close direction of the movable vane one by one, and the opening position is set as a stop position in ~~an~~ a close direction of said movable vane when the state that the opening position counted by said encoder does not change continues during ~~the~~ a predetermined time.

7. (Currently Amended) A position control unit by motor drive comprising:

a control unit including an interface circuit, a central processing

unit and a motor driver which drives a motor drive according to a target opening signal; and

a motor rotational position detecting unit provided on an output shaft of the motor; and

an adjustable link united with the output shaft of the motor drive, which controls ~~the~~ opening and shutting of a movable vane in an intake air pipe to a turbocharger of an automobile according to the revolution of the motor drive;

wherein

said motor is rotated to the stop position of said ~~tur-be~~ turbo charger in a direction where the intake air pipe is shut and the stop position in a direction where the intake air pipe is opened by the motor drive, and the position between said ~~stopper~~ stop positions is set as an operation reference position when said ~~mot-or~~ motor works.